

## **Course Objective :**

**To enable the students to efficiently design Electronic circuits using ASIC VLSI design approach.**

# Course Description:

- 1. Introduction:** VLSI Design levels, design approaches, and design methodology, and design tools.
- 2. IC Technology Overview:** IC fabrication, Process flows for NMOS and CMOS technologies.
- 3. IC Layout:** Design Rules, Symbolic layout, Layout editors, Circuit extraction, Standard cell Layout, Analog IC Layout.
- 4. Circuit Simulation:** MOST scaling, Interconnect scaling, Device Models, SPICE simulation.
- 5. Overall Chip design:** I/O structures, Power and clock distribution, Floorplanning.
- 8. Project:** Design of MSI ASIC circuit.

## **Main Reference :**

1. **Neil H.E. Weste, David Harris, “CMOS VLSI Design : A Circuits and Systems Perspective,” 3rd Edition, Addison Wesley, 2004.**